Complete Summary

GUIDELINE TITLE

Non-pharmacologic management of agitated behaviors in persons with Alzheimer disease and other chronic dementing illnesses.

BIBLIOGRAPHIC SOURCE(S)

McGonigal-Kenney ML, Schutte DL. Non-pharmacologic management of agitated behaviors in persons with Alzheimer disease and other chronic dementing conditions. Iowa City (IA): University of Iowa Gerontological Nursing Interventions Research Center, Research Dissemination Core; 2004. 54 p. [132 references]

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Gerontological Nursing Interventions Research Center (University of Iowa), Research Development and Dissemination Core. Alzheimer's disease and chronic dementing illnesses. Iowa City (IA): University of Iowa; 1996. 65 p. (Research-based protocol; no. 1996).

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

- Dementia
- Alzheimer disease
- Other chronic dementing illnesses (e.g., Pick's disease, Huntington disease, and Parkinson disease)

GUIDELINE CATEGORY

Management

CLINICAL SPECIALTY

Geriatrics
Neurology
Nursing
Psychiatry

INTENDED USERS

Advanced Practice Nurses
Nurses

GUIDELINE OBJECTIVE(S)

To discuss evidence-based non-pharmacologic interventions designed to decrease the frequency of agitated behaviors, thereby supporting functional ability and enhancing quality of life for persons experiencing Alzheimer Disease (AD) and other chronic dementing conditions

TARGET POPULATION

Institutionalized patients with Alzheimer disease or chronic dementing illnesses

INTERVENTIONS AND PRACTICES CONSIDERED

- Patient screening using Mini-Mental State Examination
- Assessment of patterns of agitated behavior using Cohen-Mansfield Agitation Inventory
- General communication techniques including verbal and non-verbal techniques
- Sensory enhancement/relaxation, such as massage and touch interventions, individualized music, white noise, sensory stimulation
- Social contact including individualized social contact, pet therapy, one-to-one interaction, simulated interactions/family videos
- Behavior therapy including differential reinforcement and stimulus control
- Structured activities, such as recreational activities, outdoor walks, physical activities
- Environmental interventions including access to wandering areas, natural/enhanced environment, reduced stimulation, light therapy

MAJOR OUTCOMES CONSIDERED

- Functional ability
- Quality of life for persons with dementia and their caregivers
- Frequency and severity of agitated behaviors

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The guideline developer performed literature searches using the following sources: Medline, Cumulative Index to the Nursing and Allied Health Literature (CINAHL).

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

The grading schema used to make recommendations in this evidence-based practice protocol is as follows:

A. Evidence from well-designed meta-analysis
B. Evidence from well-designed controlled trials, both randomized and nonrandomized, with results that consistently support a specific action (e.g., assessment, intervention, or treatment)
C. Evidence from observational studies (e.g., correlational descriptive studies) or controlled trials with inconsistent results
D. Evidence from expert opinion or multiple case reports

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

This protocol was reviewed by experts knowledgeable of research on non-pharmacological management of agitated behaviors in persons with Alzheimer's disease and development of guidelines. The reviewers suggested additional evidence for selected actions, inclusion of additional practice recommendations and changes in the protocol presentation to enhance its clinical utility.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The grades of evidence (A-D) are defined at the end of the "Major Recommendations" field.

<u>General Strategies to Assess, Monitor, and Prevent Agitated Behaviors</u>

Assessing Patterns of Agitated Behaviors

The first step in managing agitation is to assess and record patterns of behavior (Cohen-Mansfield, 2000; Hall, 1988; Hall, 1994; Hall & Buckwalter, 1991; Teri & Logsdon, 2000) (Evidence Grade = D). One goal of this assessment is to identify the underlying cause, or triggers, for the agitated behaviors. The following questions may assist caregivers in determining if patterns exist:

- What specifically occurred?
- When does the behavior occur?
- Where does the behavior occur?
- Who was present before or when the behavior occurred?
- Was there an obvious antecedent to the behavior?
- Is there an identifiable underlying unmet need or trigger?

Avoiding Triggers for Agitated Behaviors

Once triggers for agitated behaviors are identified, caregivers can take steps to reduce the frequency of these triggers, avoid the triggers, or minimize the impact of the trigger (Cohen-Mansfield, 2000; Hall, 1988; Hall, 1994; Hall & Buckwalter, 1991; Teri & Logsdon, 1991) (Evidence Grade = D). These steps may include meeting underlying needs or avoiding known triggers, such as physical restraints.

I. Meet Physiological Needs

If a physiological need is identified as a trigger for the agitated behaviors, intervene to meet the resident's need (Cohen-Mansfield, 1996; Cohen-Mansfield & Werner, 1995; Ragneskog et al., 1998) (Evidence Grade = C). For example:

- Offer food and/or fluids.
- Treat pain and discomfort (Douzjian et al., 1998) (Evidence Grade = C).
- Maintain bowel and bladder continence.
- Offer extra clothing or remove extra clothing.
- Support sensory reception.
    a. Evaluate hearing and arrange for necessary assistive device (Palmer et al., 1999) (Evidence Grade = C).
    b. Evaluate vision deficits and provide adequate lighting and/or corrective devices.

II. Evaluate and Monitor Physical Restraint Use

Physical restraint use may trigger agitated behaviors. Therefore, restraint-reduction programs may be effective interventions for decreasing all types of agitated behaviors. Initiating such a program entails an educational component as well as an array of alternative interventions tailored to fit the resident's individual needs (Werner et al., 1994) (Evidence Grade = C).

General Communication Approaches to Residents at Risk for Agitated Behaviors

A number of general communication techniques may be used to prevent or manage agitated behaviors. Overall these techniques attempt to match the health care provider and resident's conversation to the resident's comprehension ability. These strategies also help the resident maintain a sense of control to the extent that this is possible. These communication approaches are important with all resident interactions, including the specific interventions described in a subsequent section.

I. Verbal Communication Techniques

Use verbal communication techniques that are appropriate for persons with chronic dementing conditions. (Hall, 1988; Hall, 1994; Hall & Buckwalter, 1991) (Evidence Grade = D). For example:

- Identify self with each interaction.

- Slowly approach the resident from the front while telling them what you are going to do (Teri & Logsdon, 1991) (Evidence Grade = D).
- Keep voice volume appropriate for distance and ability to hear.
- Use a normal speech rhythm. Speaking too fast or in an irritated, excited manner may cause agitation.
- Maintain an accepting, calm manner by using a reassuring and gentle tone of voice (Teri & Logsdon, 1991) (Evidence Grade = D).
- Communicate face-to-face with simple, concrete, positive statements. For example, tell the resident what is wanted instead of what is not wanted (e.g., "Please sit in the chair," instead of "Don't pace in the hallway.").
- Distract the resident with questions about the problem and gradually turn their attention to a pleasant, unrelated subject. This may be accompanied by a change in activity, move to another room, or temporary leave from the situation (Teri & Logsdon, 1991) (Evidence Grade = D).
- Give directions or ask questions slowly and one at a time. Attempt to match the provider's language complexity with the comprehension ability of the resident (Hart & Wells, 1997) (Evidence Grade = C).
- Relate to the resident in a familiar way. Be knowledgeable about their occupation, family status, hobbies, and special interests.
- Talk with, not at, the resident.
- Be an active listener; allow for expression of feelings and share your understanding of their situation (e.g., "You sound angry.").
- Avoid arguing or attempts at reasoning with the resident; such attempts tend to escalate agitation (Teri & Logsdon, 1991) (Evidence Grade = D).
- Listen carefully to the resident's response; do not assume s/he understands what was said.

II. Non-Verbal Communication Techniques

Use non-verbal communication techniques that are appropriate for persons with chronic dementing conditions. For example:

- Supplement verbal communication with gestures or cues when possible.
- Use non-threatening postures during interactions, such as standing or sitting at eye level rather than standing over the resident (Teri & Logsdon, 1991) (Evidence Grade = D).
- Avoid sudden emphatic movements; use slow, deliberate gestures when appropriate.
- Use touch judiciously, along with calm, soothing speech (Teri & Logsdon, 1991) (Evidence Grade = D). This approach helps to alleviate stress and anxiety, provide comfort and reassurance, and reinforce calm behavior (Kim & Buschmann, 1999) (Evidence Grade = C).

Specific Interventions to Prevent and Manage Agitated Behaviors

The following section includes a broad assortment of interventions to manage agitated behaviors and is offered collectively as an alternative to pharmacologic agents and restraint usage. Specific interventions are categorized into six areas:

sensory enhancement/relaxation, real or simulated social contact, behavior therapy, structured activities, environmental modifications, and staff development (Beck & Shue, 1994; Cohen-Mansfield, 2001). Table 3 of the original guideline document summarizes the specific interventions that fall within these broad intervention categories.

Sensory Enhancement/Relaxation

Activities stimulating the senses and inducing relaxation have the potential for reducing agitated behaviors among residents with Alzheimer Disease (AD) and other chronic dementing conditions. The following section describes interventions that attempt to stimulate the resident's senses or induce relaxation, including massage and touch; music therapy; white noise; and combination sensory stimulation approaches.

I. Massage and Touch Intervention

Slow-stroke massage, hand massage, and therapeutic touch are specific interventions that have been tested in persons with chronic dementing conditions to decrease stress, enhance relaxation, and reduce agitated behaviors. Protocols for these techniques are described below.

A. A Slow-Stroke Massage Protocol (Rowe & Alfred, 1999) (Evidence Grade = C):

1. Reduce noise from television, stereo, or any other extraneous noise.
2. Attempt to use the same location and time for each massage session.
3. Limit conversation to comments such as "You are relaxing. Your neck, shoulders, and back feel warm, quiet, and relaxed."
4. Reduce your stress, because caregiver tension can be transferred to the resident. Therefore, before beginning the massage intervention, take 3 deep, slow breaths, pulling all of the tension in the body up and out with each breath. Imagine a bright ball of healing energy, bringing calmness that fills your body and finally flows from your fingers. Begin the massage when you feel relaxed. [Note: Step 4 is to be completed by the person providing the massage intervention.]
5. Seat the resident in a chair leaning over a table onto pillows.
6. Firmly grasp and knead the top of the resident's shoulders with both hands (2 minutes).
7. Place the first two fingers or thumbs of each hand on the second indentations at or just below the base of the resident's skull, making tiny circular movements on the upper neck (30 to 45 seconds).
8. Place the palm of one hand at the base of their skull and make long, smooth strokes all of the way down the spine to the waist. The second hand follows the first at the base of the skull and strokes down the spine as the first hand returns to the base of the skull to start another stroke, and so forth. Strokes are continuous, sweeping movements down the spine with the effect of continuous contact (1 to 2 minutes).

9. Place hands on the sides of the resident's neck under the ears and stroke down and over the collarbones with the thumbs just over his/her shoulder blades. Repeat the motion several times (45 seconds).
10. Place the thumb of each hand beside the spine, beginning at the shoulders. Walk the thumbs down the spine to the waist and up the spine to the neck. Repeat several times (1 minute).
11. Knead the upper back and shoulders again (1 to 2 minutes).
12. Finish by placing palms on each side of the neck. Make continuous, long, sweeping strokes down the neck, across each shoulder, and down the back near the spine. Repeat the entire pattern several times (1 minute). Each massage stroke is intended to bring relaxation, using slow and rhythmic strokes. The length of time for each stroke, as well as the time between strokes, should be the same.

B. A 5-Minute Hand Massage Protocol (Kilstoff & Chenoweth, 1998; Snyder, Egan, & Burns, "Efficacy of hand massage," 1995; Snyder, Egan, & Burns, "Interventions," 1995; Snyder & Olson, 1996) (Evidence Grade = C):
1. Assess the resident's hands for open wounds, redness, irritation, and other skin conditions. Do not massage any injured, reddened, or swollen portion of the hand.
2. Seat the resident comfortably, preferably in their room.
3. Explain the procedure using concrete, simple terms.
4. Apply a small amount of oil to the resident's hand.
5. Use the following stroke sequence on the back of the hand: effleurage, using moderate pressure (short/medium-length straight, rhythmic, gliding strokes which follow the fiber direction of the underlying muscle from wrist to fingertips); large half-circular stretching strokes from center to side of hand, using moderate pressure; small circular strokes (making little O's with thumb) over entire back of hand, using light pressure; and featherlike, straight strokes from wrist to fingertips, using very light pressure.
6. Use the following stroke sequence on the palmar surface: effleurage, using moderate pressure (short/medium-length straight, rhythmic, gliding strokes which follow fiber direction of underlying muscle from wrist to fingertips); petrissage (kneading, gently lifting and squeezing the skin); small circular strokes (making little O's with thumb) over the entire palm of the hand, using moderate pressure; and large half-circular stretching strokes from the center of the palm to the sides, using moderate pressure.
7. Gently palpate the resident's fingers from base to tip on the sides and top/bottom surfaces, using light pressure. Follow with circular range of motion exercises for each digit and gently squeeze each nail bed.
8. Conclude by laying the resident's hand on yours and cover it with your other hand. Gently draw the resident's hand toward you several times. Turn their hand over and gently draw the hand toward you several times.
9. Repeat steps 4 to 8 for the other hand.

C. A Ten-Minute Therapeutic Touch Protocol (Snyder et al., "Interventions," 1995; Woods & Dimond, 2002) (Evidence Grade = C). Please refer to the Web site for Nurse Healers-Professional Associates International at www.therapeutic-touch.org for further training information on therapeutic touch techniques:

1. Seat the resident comfortably, preferably in their room.
2. Explain the procedure using concrete, simple terms.
3. Center self. Centering requires the provider to quiet himself/herself, direct attention inward, and concentrate on the wholeness of the resident with dementia. The centered provider is able to direct energies and attention to the resident.
4. Place hands on the resident's shoulder area in middle of his/her back. Perform the following gentle movements: down and up back, up neck, behind ears, and rest one hand on the forehead while making contact with the back of the neck using other the hand.
5. Transmit calming energy throughout movements. When rebound energy is felt, use unruffling (sweep hands over the length of the resident's body in long, rhythmic strokes) to smooth out energy fields and remove areas of congestion, thereby distributing the energy across all body surfaces.
6. Conclude by resting hands on the resident's shoulders.

II. Individualized Music

A substantial body of evidence demonstrates the effectiveness of individualized music as an intervention for agitated behaviors among persons with chronic dementing conditions by stimulating remote memory and sensation (Casby & Holm, 1994; Clark, Lipe, & Bilbrey, 1998; Cohen-Mansfield & Werner, 1997; Gotell, Brown, & Ekman, 2000; Ragneskog et al., 2001; Snyder & Olson, 1996) (Evidence Grade = B). Refer to the National Guideline Clearinghouse (NGC) summary of the guideline Evidence-Based Practice Protocol: Individualized Music for the complete description of the intervention (Gerdner, 2001).

III. White Noise

White noise, defined as any low intensity, slow, continuous, rhythmic, monotonous sound, may be used as an auditory stimulation intervention for decreasing agitated behaviors. The use of environmental white noise has shown potential as an effective treatment for reducing the frequency of verbal agitation in some persons with dementia (Burgio et al., 1996) (Evidence Grade = C), as well as other types of agitated, restless behaviors (Young, Muir-Nash, & Ninos, 1988) (Evidence Grade = C). Examples of environmental white noise and other types of white noise, respectively, include:

- Audiotapes containing sounds of mountain streams and ocean waves
- A whirling fan, humming air conditioner, or other type of environmental sound generator

IV. Sensory Stimulation

Sensory stimulation activities involving music, touch, and smell may be implemented alone or in combination to enhance psychological well-being and induce relaxation, thus potentially reducing distress and decreasing the prevalence of agitated behaviors (Ballard et al., 2002; Brooker et al., 1997; Holtkamp et al., 1997; Snyder & Olson, 1996; Witucki & Twibell, 1997) (Evidence Grade = C).

A. A combination approach using massage/touch and auditory stimulation entails the following (Snyder & Olson, 1996) (Evidence Grade = C):
   - Provide hand massage to each hand for approximately five minutes (please refer to the hand massage protocol under the "Massage/Touch" section).
   - Play musical tapes of religious hymns, easy listening classics, or new age music, depending upon family and/or staff indication of resident preference. The use of a Spinoza bear™, or similar product, may be used to further stimulate the senses. The Spinoza bear™ is a stuffed bear that contains a tape recorder/player and hugs the person when held.

B. Approaches using aromatherapy, either alone or in combination with other sensory stimulating activities, include the following:

   1. Aromatherapy used alone (Ballard et al., 2002) (Evidence Grade = C)
      - Prior to the intervention, provide the resident with a brief verbal description of what will happen. Combine Melissa officinalis (lemon balm) essential oil with an odorless base lotion.
      - Apply mixture topically to the resident's face and both arms twice a day.
      - Use approximately 0.16 to 0.17 g per dose for a total of 6 doses per day.
      - Gently apply the cream for 1 to 2 minutes.

   2. Aromatherapy, used alone or in combination with massage/touch (Brooker et al., 1997) (Evidence Grade = C)
      - Prior to the intervention, provide the resident with a brief verbal description of what will happen. Seat the resident in a comfortable chair with an aroma fan placed at shoulder level.
      - Spread enough pure lavender oil onto a palette to last for 30 minutes.
      - Switch fan on 10 minutes prior to the session.
      - Hand and lower arm massage may be provided separately or simultaneously with the aromatherapy treatment.
      - If the resident becomes intolerant of massage, holding their hand may be an alternative option for providing the touch stimulation.

   3. Aromatherapy used in combination with music and massage (Witucki & Twibell, 1997) (Evidence Grade = C):

- Use as part of the resident's regularly scheduled activity plan.
- Prior to the intervention, provide the resident with a brief description of what will happen.
- Play recorded music selections identified by families as enjoyable for the resident in the past.
- Hold and massage the resident's hand for five minutes (please refer to the hand massage protocol under the "Massage/Touch" section).
- Offer various odors individually (e.g., orange, cinnamon, coffee, chocolate, flowers) to the resident's nostrils for five minutes.

C. Another combination approach that has demonstrated a positive effect on decreasing agitated behaviors in some studies involves the utilization of a multisensory stimulation environment (Burns, Cox, & Plant, 2000; Chitsey, Haight, & Jones, 2002; Finnema et al., 2000; Holtkamp et al., 1997; Lancioni, Cuvo, & O'Reilly, 2002) (Evidence Grade = C):
    - Snoezelen® is an individual-oriented, multisensory, environmental intervention aimed at promoting a general feeling of restoration, trust, and refreshment among persons with developmental disabilities, such as AD and other chronic dementing conditions.
    - The intervention focuses on the physical arrangement of space and stimuli as well as the functional role of the staff taking part in Snoezelen®.
    - The intervention is achieved by combining soft music, aromatherapy, textured objects, favorite foods, and colored lighting.

Social Contact: Real or Stimulated

Several interventions strive to increase the frequency and quality of social interaction for persons with chronic dementing conditions in order to minimize sensory deprivation and social isolation, and thereby to prevent or reduce the incidence of agitated behaviors. The following section describes interventions that attempt to enhance social interactions, including individualized social contact, pet therapy, one-to-one social interactions, and simulated social interactions. Many of these interventions can be delivered individually or in a group format.

I. Individualized Social Contact

The goals of individualized social contact interventions are to provide pleasant activities that match the resident's interests and abilities, as well as activities that take advantage of the resident's strengths rather than deficits (Draper et al., 2000; Mitchell & Maercklein, 1996; Teri & Logsdon, 1991) (Evidence Grade = C). For example:

- Attain the resident's history, including their occupation, hobbies, leisure activities, strengths, and weaknesses to help identify meaningful activities.

- Determine the resident's original language; persons who are of a non-English-speaking background may benefit from an intervention program individualized according to their original language (Runci, Doyle, & Redman, 1999) (Evidence Grade = C).
- Create interventions based on the resident's personal and social history. For example, a person whose occupation was a textile salesperson may participate in an activity of matching squares of fabric and discussing what might be made with each type of cloth. This provides an opportunity to reminisce, capitalize on current abilities, touch different textures, and interact with the health care provider. Other examples of meaningful activities include:
    a. Potting or attending to flowers or plants
    b. Appropriate cleaning tasks
    c. Laundry tasks
    d. Cooking (with appropriate supervision)
    e. Self-expression (e.g., music, coloring or painting, drawing, and using clay)
    f. Individual or group painting (start a picture and have each person add to it)
    g. Reminiscence (the vocal or silent recall of events in a person's life and life review; reminiscence can occur alone, with another person, or as a group activity) (Woods et al., 1992) (Evidence Grade = D)
    h. Life review (a form of structured reminiscing that helps persons formulate their life stories according to the hopes or goals that they've set for themselves. This occurs through the process of reviewing, organizing, and evaluating the overall picture of one's life).
    i. Card playing (persons with early AD can still play cards with subtle reminders; persons with moderate AD can play simple games such as War or Old Maid, perhaps using only half a deck of cards; persons with moderate to severe AD can match cards according to color or suit)

II. Pet Therapy

Pet therapy, or the use of companion animals, produces positive effects for persons with AD and other chronic dementing conditions via several mechanisms. Resident interactions with therapy animals may increase socialization (Kongable, Buckwalter, & Stolley, 1989; Kongable, Stolley, & Buckwalter, 1990). (Evidence Grade = C), induce relaxation, provide distraction, and/or provide physical contact. Pet therapy also may serve as an effective intervention for reducing the frequency of agitated behaviors in institutionalized persons with AD and other chronic dementing conditions (Churchill et al., 1999; Fritz et al., 1995; Zisselman et al., 1995) (Evidence Grade = C). For example:

- Churchill and colleagues (1999) demonstrated short-term exposure to a therapy dog ameliorated agitated behaviors, particularly during the commonly regarded period of agitation known as sundown syndrome. Animal therapy can increase socialization behaviors and may be used in conjunction with other calming interventions.

- Fritz and associates (1995) concluded that interaction with a companion animal may temper agitation and aggression by reducing episodes of anxiety, verbal aggression, and hyperactive behaviors.
- Visit the Alliance for Psychosocial Nursing's Web site at www.psychnurse.org for more information regarding the use of dogs for pet therapy.

III. One-to-one Interaction

Engaging a resident in one-to-one social interaction may aid in the prevention and management of agitated behaviors (Beck et al., 1998; Cohen-Mansfield, 1996; Cohen-Mansfield & Werner, "Determinants," 1998; Draper et al., 2000) (Evidence Grade = C). One-to-one activities involving more interaction appear to be most effective (Cohen-Mansfield & Werner, 1997) (Evidence Grade = C). In addition, this intervention strategy may be more effective for persons exhibiting verbally agitated behaviors who are less cognitively and less functionally impaired (Cohen-Mansfield & Werner, "Determinants," 1998) (Evidence Grade = C). Examples of 1:1 social interaction include:

- Provide direct stimulation, appropriately engaging the resident in activities of varying levels of demand. Examples of things to include in the activity are talking, singing, hands-on activity, exercising, touch, food, and theme bags. Theme bags contain items having to do with a particular topic to look at, discuss, and share memories about. A "children" theme bag may include toys, a yo-yo, a doll, watercolors, crayons, and a top, while a "cooking" theme bag may include dry pastas, measuring spoons, recipes, cookbooks, and spices.
- Use the time spent with the resident while performing activities of daily living (ADLs) to maximize one-to-one social interaction. For example:
    a. Engage the resident in range-of-motion exercises by tossing balls, moving hands and arms.
    b. Encourage sensory stimulation by using textured items, make-up, spices, or soaps.
    c. Provide manual activities such as clipping coupons (Note: use safety scissors) or putting puzzles together.
    d. Use conversation to discuss personal information and/or feelings, specific holidays, favorite things, or other topics unrelated to specific daily tasks (e.g., positive remarks about the resident's appearance, family photos in person's room, and birds heard outside). Nursing staff can conduct one-way conversations to demonstrate the resident is valued even though they may be unable to respond appropriately in return (Chen et al., 2000) (Evidence Grade = D).

IV. Simulated Interaction/Family Videos

Simulated social interaction interventions, also called simulated presence therapy (SMT), use media such as videotapes and/or audiotapes to simulate an interaction with a person who is important to the resident with dementia. SMT is based on the belief that the most central source of stability for the resident is a family member or surrogate, and the presence of this person

provides the resident with comfort. Creating such a tape, therefore, seeks to replicate the relative's or surrogate's presence and induce the sense of comfort (Woods & Ashley, 1995) (Evidence Grade = C). Examples of simulated interaction include:

A. Provide family-generated videotapes or interactive audiotapes to provide auditory and/or visual stimulation as well as indirect interaction with a relative (Camberg et al., 1999; Cohen-Mansfield, 1996; Cohen-Mansfield & Werner, 1997; Cohen-Mansfield & Werner, "Determinants," 1998; Woods & Ashley, 1995) (Evidence Grade = C). For example:
    - Identify cherished memories and other best loved experiences from the resident's lifetime to ensure a personalized intervention. Videotapes characterized by expressions of love and issues related to past events rather than to current events tend to be more effective in reducing agitated behaviors, particularly verbally disruptive behaviors (Werner et al., 2000) (Evidence Grade = C).
    - Introduce the memories to the resident in the format of a one-sided telephone conversation with a family member or surrogate, rich in selected memories and positive emotions, using a continuous play audio tape system. Incorporate soundless spaces to correspond to the resident's side of the conversation.
    - The approximately 15-minute intervention may be used for extended periods of time since each repetition is viewed as a fresh, live telephone call.

B. Play Video Respite (VR)™ tapes to induce a calming effect and resolve conflictual situations that may lead to agitation (Hall & Hare, 1997; Lund et al., 1995). (Evidence Grade = D).
    - This intervention simulates interaction via conversational, slow-paced, and simple messages.
    - Messages contain positive themes to enhance self-esteem as well as people and experiences residents are most likely to have ingrained in their long-term memories.
    - VR Tapes™ are generic in nature, but several may be selected based upon the resident's cultural background (e.g., "Sharing Christmas Cheer," "A Kibbitz with David," and "Celebrating African American Culture").

Behavior Therapy

Behavior therapy includes interventions that attempt to change the frequency, intensity, duration, or location of a specific behavior or set of behaviors by systematically varying antecedent stimuli and/or consequential events. Behavior therapy, as a term, is often used interchangeably with behavior management, behavioral interventions, behavioral strategies, and behavior modification (Boehm et al., 1995) (Evidence Grade = C). Specific categories of behavior therapy interventions described in this protocol include differential reinforcement and stimulus control.

I. Differential Reinforcement

Psychosocial management techniques that involve differential reinforcement of behavior can reduce agitated behaviors among persons with AD and other chronic dementing conditions. For example, contingent reinforcement of quiet behavior and environmental stimulation tailored to individual preferences and past history may reduce the frequency of noisemaking behaviors (Birchmore & Clague, 1983; Doyle et al., 1997) (Evidence Grade = C). In addition, differential reinforcement (the use of tangible reinforcers, such as food) and extinction (attention given in the absence of the behavior) also may reduce the frequency of wandering behaviors (Heard & Watson, 1999) (Evidence Grade = C).

A. Identify and develop behavioral interventions through the following behavioral analysis technique (Boehm et al., 1995) (Evidence Grade = C):
   - Observe, document, and analyze the resident's behavior using the following framework:
     a. Antecedent events preceding and serving as the stimuli for agitated behaviors
     b. Small steps of the behavior comprising the whole behavior
     c. Consequences following the behavior
   - Based on step #1, an effective behavioral plan may include the following:

     a. Antecedents to prompt calm behavior may include eye contact, a calm interaction, slow movements, a constant flow of soft and gentle words of encouragement, explanations of what will be done, and a warm cloth applied to the skin.
     b. Prompt calm, cooperative behavior by reinforcing with food or praise for each small step toward the desired behavior.
     c. Compliments, soothing speech, praise, and/or food may serve as reinforcing consequences that support resident cooperation.

B. Employ the following types of interventions together (Doyle et al., 1997) (Evidence Grade = C):
   - Reinforce quiet behavior positively, using rewards tailored to each individual such as a favorite food. Put noisy behavior on an extinction schedule by ignoring noise.
   - Distract residents with music, conversation, touch, or a visual aid.
   - Provide extra stimulation, such as music, tapes of familiar voices, olfactory stimulation using pleasant odors, tactile stimulation of different types of materials, and social interactions.

C. Differential reinforcement techniques can also be implemented during daily care routines to reduce agitated behavior (Lewin & Lundervold,

1987) (Evidence Grade = C). The behavioral rehabilitation intervention used by Rogers and colleagues (1999) (Evidence Grade = C) consists of the following activities:

- Skill elicitation, where retained ADL skills are identified and elicited
- Habit training, where retained skills are reinforced and solidified and further functional gains are facilitated

II. Stimulus Control

Stimulus control techniques are another category of behavior therapy that may reduce the incidence of agitated behaviors. Specifically, residents may be conditioned to associate a specific cue with information or a behavior in order to modify agitated behavior (Bird, Alexopoulos, & Adamowicz, 1995; Hanley, 1981) (Evidence Grade = C). For example:

- Hussian (1988) used verbal and/or physical prompts given to the resident to attend to a variety of enhancing stimuli followed by exposure to the stimuli without prompting (Evidence Grade = C).
- A stimulus control intervention aimed at limiting potentially hazardous ambulation, such as elopement or wandering, includes the following (Hussian, 1982; Hussian & Brown, 1987; Mayer & Darby, 1991) (Evidence Grade = C):
  a. Using a grid configuration, place 3, 4, or 6 one and one-half inch strips of tape horizontally on the floor in front of the exit door, with the last strip of tape placed 3 feet from the end of the hallway. Alternatively, a full-length mirror placed approximately 30 cm in front of the main exit ward door may be used. Mark its position on the floor to make sure it remains in the same place. The mirror must be placed in a position where the exit door can still be easily opened. The goal is to provide supernormal, artificial stimuli with sufficiently simplified and magnified characteristics (i.e. size, shape, color)
  b. Verbally prompt resident to look down at the grid pattern (or mirror).
  c. Grid pattern (or mirror) serves as the stimulus preventing elopement.

Structured Activities

Structured activities include interventions that engage the resident in structured physical activities to prevent boredom and decrease agitation. The following section describes interventions that attempt to engage the resident in recreational activities, outdoor walks, and physical activities.

I. Recreational Activities

Recreational interventions (Aronstein, Olsen, & Schulman, 1996) and other structured activities programs (Sival et al., 1997) may be helpful in the management of agitated behaviors in residents with AD and other dementias (Evidence Grade = C). A specific example of a recreational activity intervention used to diffuse and divert agitated behaviors as well as to

engage residents during idle time includes the following (Aronstein, Olsen, & Schulman, 1996):

- Individualize recreational interventions according to the resident's interest and strengths.
- Incorporate an array of tactile, auditory, sensory, and visual stimulation.
- Provide a range of complexities to respond to the varying cognitive and motor skills of the resident. Recreational activity types include:
  a. Nurturing (e.g., dolls, stuffed animals)
  b. Tactiles (e.g., fabric books, squeeze balls)
  c. Sound/music (e.g., xylophones, bells)
  d. Sewing (e.g., fabric squares, lacing tiles)
  e. Sorting/perception (e.g., wood sorter, puzzles)
  f. Manipulatives (e.g., bead mazes, flexible cubes)

II. Outdoor Walks

A walking program designed to meet the physical and social needs of residents with AD and other dementias may reduce agitated behaviors (Hall, 1988; Hall, 1994; Hall & Buckwalter, 1991) (Evidence Grade = D), including unsafe wandering (Holmberg, 1997) (Evidence Grade = C). A suggested program facilitating an outlet for physical energy and interpersonal interaction includes the following (Cohen-Mansfield & Werner, "The effects of an enhanced environment," 1998) (Evidence Grade = C):

- Provide group walks through public areas of the nursing home or outdoors as tolerated by the resident.
- Include time and places for residents to rest.
- Escort residents to an outdoor garden using 1:1 supervision as an individualized approach to this activity.

III. Physical Activities

Physical exercise decreases agitation behaviors by providing an outlet for anger and frustration as well as an alternative to repetitive, disruptive activities (Beck et al., 1992) (Evidence Grade = D). A sensorimotor program designed to improve strength and flexibility may effectively reduce agitated behaviors, as well as improve grip strength and flexibility among persons with AD and other chronic dementing conditions. For example:

A. The Neurodevelopmental Sequencing Program (NDSP) is a type of sensorimotor program that uses a developmental approach to exercise and motor skills, and it includes the following (Buettner, 1995; Buettner et al., 1996):
   - Specialized equipment to promote movement and success experiences
   - Planned activities that match the functional abilities of the resident
   - Programs planned around familiar themes (e.g., "State Fair Days" and "Back to Nature")

- Activities provided collaboratively by therapeutic recreation and nursing staff
- Activities performed using a group format. Therapy groups may be created by prescribing residents to different groups based on their cognitive and overall functioning.
- Programming/modalities provided may include the following: sensory air mat therapy; sensory stimulation box program; sensory special events; geriatric exercise/relaxation program; build your own games; sensory herb garden/adapted garden; sensory cooking program; the price is right cognitive therapy; special event prep program (gross motor arts); and wanderer's leisure lounge (area set up for independent leisure pursuits).

B. The Exercise/Movement Protocol for Alzheimer's Disease (TEMP-AD) is a program that provides opportunity for physical exercise, thereby decreasing agitated behavior (Namazi, Gwinnup, & Zadorozny, 1994). TEMP-AD consists of the following:
   - A low-intensity exercise program conducted indoors
     a. 10-minute warm-up phase
     b. 20-minute light exercise/movement phase
     c. 10-minute cool-down phase
   - Encouragement of active participation rather than perfection in executing routines
   - Demonstration of movements to facilitate understanding of program routine
   - Provision of verbal instructions to further cue residents' participation
   - Instruction on correct breathing techniques
   - Stressed importance of stopping if resident feels discomfort or excessive fatigue

Environmental Interventions

Several environmental interventions exist that may decrease the frequency of agitated behaviors by providing a home-like atmosphere, reducing unnecessary stimulation, maintaining safety, protecting autonomy and independence, and supporting normal sleep/wake cycles. The following section describes interventions that attempt to decrease agitation through environmental modifications, including wandering areas, enhanced natural environments, reduced environmental stimulation, and light therapy.

I. Wandering Areas

Interventions aimed at providing the freedom to go outdoors or have access to extra space for wandering may decrease the occurrence of agitated behaviors (Namazi & Johnson, 1992) (Evidence Grade = C), particularly verbal and physical aggression (McMinn & Hinton, 2000) (Evidence Grade = C). Such interventions include:

- Unlocking exit doors leading to outdoor walking paths. Outdoor walking paths and courtyards need to be secured with fences or walls to prevent elopement.

- Providing residents a release from mandatory confinement
- For a complete description of interventions used to reduce problem wandering behavior, see the NGC summary Evidence-Based Practice Protocol: Wandering (Futrell & Mejillo, 2002).

II. Natural/Enhanced Environments

Enhancing the resident's care environment by including natural elements or decorative objects may produce a positive effect on agitated behaviors. For example:

A. One environmental modification approach incorporates and focuses on natural elements within the care environment rather than on the care procedure or agitated behavior (Whall et al., 1997) (Evidence Grade = C):
   - During the provision of care (e.g., bathing activities), do the following to draw upon the resident's early memory and induce a calming, restorative effect:
     a. Play recorded bird songs, sounds of babbling brooks, and/or sounds of other animals.
     b. Show large, bright pictures.
     c. Allow the resident to taste a familiar food (e.g., pudding or soda).
     d. Engage the resident in identifying the sound heard, picture seen, or food tasted.
     e. If the resident responds to one or more of the natural elements, continue a discussion on the particular element.

B. Another environmental approach focuses on enhancing the resident's environment using decorative objects to create a nature-scene or a family-like scene (Cohen-Mansfield & Werner, "The effects of an enhanced environment," 1998) (Evidence Grade = C).
   - Decorate corridors, where residents who frequently pace spend much of their time.
   - Include visual, auditory, and olfactory stimuli that are considered familiar to residents.
   - Create a nature scene by including the following:
     a. Display wall murals or posters of forests, valleys, and other colored vistas.
     b. Add artificial plants and trees.
     c. Play tape-recorded nature sounds (e.g., bird sounds).
     d. Stimulate olfactory senses using an aroma diffuser machine (e.g., Aveda EPA-1000 may be used to replicate the smell of a forest).
   - Create a home or family-like scene by including the following:
     a. Display enlarged black-and-white photos of family scenes from the early 1940s and 1950s.
     b. Pictures of persons familiar to the general public (e.g., President Kennedy) may also be posted.
     c. Use artificial plants.
     d. Play tape-recorded music.

e. Provide a citrus aroma to further stimulate the senses.
f. A home-like atmosphere may be further enhanced by adding an armchair or similar furniture piece next to a coffee table with books.

III. Reduced Stimulation

Environmental modifications to reduce the level of sensory stimulation, minimize the resident's reliance on memory, and/or meet individual needs are associated with reductions in agitated behaviors (Cleary et al., 1988; Gold et al., 1991; Hall, Kirschling, & Todd, 1986; Leon & Ory, 1999; Meyer et al., 1992; Teri & Logsdon, 1991) (Evidence Grade=C).

- The following strategies aim to create an environment that balances low stimuli with appropriate opportunities for social interaction:
  a. Provide adequate and safe space for exploration and release of physical energy by moving tables and/or other furniture. If possible, enclosed wandering areas are beneficial.
  b. Provide appropriate furniture and equipment to create a relaxed, home-like environment.
  c. Provide soft yet adequate lighting to enhance a calming effect (Teri & Logsdon, 1991) (Evidence Grade = D).
  d. Respect personal space and provide privacy to maintain self-esteem.
  e. Provide environmental cues or modifications to minimize reliance on memory. Examples of environmental cues include arrows pointing to bathroom, signs that use pictures instead of words, nightlights, and Velcro fasteners instead of buttons.
  f. Control noise levels; decrease intercom use and monitor TV and/or radio volume.
  g. Monitor and limit noise-producing activities when appropriate.

IV. Light Therapy

Agitated behavior in residents with AD or other chronic dementing conditions may worsen and increase at nighttime or near sunset, a phenomenon commonly referred to as sundown syndrome. Additionally, sleep patterns among the elderly and those with dementia may be disrupted, creating an irregular sleep-wake cycle that further contributes to the incidence of agitated behaviors. Interventions for decreasing agitation include light therapy according to the following protocols:

- Increase the light intensity used during meal times to enhance visual stimulation; this may be further facilitated by setting the table to maximize visual contrast (e.g., the use of a white tablecloth with high contrast glasses and napkins) (Koss & Gilmore, 1998) (Evidence Grade = C).
- Implement bright light (2500 to 5000 lux) therapy (Lovell, Ancoli-Israel, & Gevirtz, 1995; Lyketsos et al., 1999; Mishima et al., 1994; Thorpe et al., 2000) (Evidence Grade = C) according to the following guidelines:

a. Place a light box containing full-spectrum fluorescent lamps 1 m from the resident at a height within his/her visual field.
b. The resident should be in their most comfortable position.
c. Administer the intervention for approximately two hours in the morning.
d. The resident may enjoy another activity (e.g., watching television, eating) during the intervention while intermittently glancing at the light source.

Definitions:

Evidence Grading

A. Evidence from well-designed meta-analysis
B. Evidence from well-designed controlled trials, both randomized and nonrandomized, with results that consistently support a specific action (e.g., assessment, intervention, or treatment)
C. Evidence from observational studies (e.g., correlational descriptive studies) or controlled trials with inconsistent results
D. Evidence from expert opinion or multiple case reports

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

References open in a new window

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Improved quality of life for persons with dementia and their care providers.
- Improved functional ability
- Decreased frequency and severity of agitated behaviors
- Reduced incidence of adverse occurrences related to chronic dementing illness.

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

This evidence-based practice protocol is a general guideline. Patient care continues to require individualization based on patient needs and requests.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

The "Evaluation of Process Factors and Resident Outcomes" section and the appendices of the original document contain a complete description of implementation strategies.

IMPLEMENTATION TOOLS

Audit Criteria/Indicators
Chart Documentation/Checklists/Forms
Resources
Staff Training/Competency Material

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

McGonigal-Kenney ML, Schutte DL. Non-pharmacologic management of agitated behaviors in persons with Alzheimer disease and other chronic dementing conditions. Iowa City (IA): University of Iowa Gerontological Nursing Interventions Research Center, Research Dissemination Core; 2004. 54 p. [132 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

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GUIDELINE COMMITTEE

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Gerontological Nursing Interventions Research Center (University of Iowa), Research Development and Dissemination Core. Alzheimer's disease and chronic dementing illnesses. Iowa City (IA): University of Iowa; 1996. 65 p. (Research-based protocol; no. 1996).

GUIDELINE AVAILABILITY

Electronic copies: Not available at this time.

Print copies: Available from the University of Iowa Gerontological Nursing Interventions Research Center, Research Dissemination Core, 4118 Westlawn, Iowa City, IA 52242. For more information, please see the University of Iowa Gerontological Nursing Interventions Research Center Web site.

AVAILABILITY OF COMPANION DOCUMENTS

The original guideline document and its appendices include a variety of implementation tools, including outcome and process indicators, staff competency material, and other forms.

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on March 30, 1999. The information was verified by the guideline developer on June 23, 1999. This NGC summary was updated by ECRI on February 4, 2005. The information was verified by the guideline developer on March 4, 2005.

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